

Ship Wed April 11

Work Order ID 82759

April-09-12 9:13:27 AM

82759

Page 1

Item ID: D204-635-011

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Skidtube

Start Date: 4/05/12 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 4/10/12 Req'd Qty: 1.00 *1*

Customer:

Reference: REWORK TO CHG 7

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan Accept Reject Reject Insp.
Code Qty Qty Number Stamp

Draw Nbr

Revision Nbr

IIN-D204-635

G

150

0.00

150

Skidtubes

Skidtubes

Memo

0.00

PULL FROM STOCK D204-635-011 B 29959

(REWORK PER CP E-MAIL)

-Drill extra holes and install inserts for new wearshoes

REWORK:

REMOVE WEARSHOES

D2577-1 X 1 B 29489

D2577-3 X 1 B 29326

D2577-7 X 1 B 21607

RETURN TO STOCK

AN3-4A X 44 BOLTS B 1102832

AN960JD10L WASHERS B 1102217

DISCARD HARDWARE

REPLACE WITH:

D3564-9 X 1 B 82255

D3564-7 X 1 B 43229

D3564-11 X 1 B 78871

D3564-13 X 1 B 77610

D3566-1 X 2 B 80919

D3566-7 X 1 B 55190

D3566-13 X 1 B 76417

AN3C4A X 44 B 1110187

NAS1149C0332R X 44 B 111255

* (X2) ->

(4) (6x) AHS-1-1032-130 / M120807 inserts

DART				TEL: 1-613-632-3336	
TRANSPORT CANADA APPROVAL #09-89				FAX: 1-613-632-4443	
P/N	D204-635-011	CHG	CHG004		
DESC	Skidtube	SIC	SH96-88		
LOT	B29959	SIC	SR00563NY		
MODEL	Bell 204	SIC			
MADE IN CANADA					

B82759

(2x) NAS1149D0332J / M120 6x4 washers
(2x) AN35A / M118626 bolts

Work Order ID 82759***82759***

Page 2

April-09-12 9:13:27 AM

Item ID: D204-635-011

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Skidtube

Stop ***NS2***

Start Date: 4/05/12 Start Qty: 1.00

1

Cust Item ID:

Required Date: 4/10/12 Req'd Qty: 1.00

1

Customer:

Reference: REWORK TO CHG 7

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursTool ID Tool # Plan
Code QtyReject
QtyReject
NumberInsp.
Stamp

DRILL EXTRA HOLES TO INSTALL INSERTS FOR NEW WEARSHOES

DP 10-4-10

160

QC5- Inspect part completeness to step on W/O

0.00

160

QC

Memo

0.00

8/2/4/11

Quality Control

170

0.00

170

Powdercoat

Memo

0.00

1 x 0 11/10/4/11

Powder Coating

TOUCH UP/ POWDERCOAT IF NECESSARY

175

0.00

175

HandFinish

Memo

0.00

1 x 0 11/10/4/11

Hand Finishing

RE-ASSEMBLE WITH NEW WEARPLATES PER SEQ 150

Work Order ID 82759

82759

Page 4

April-09-12 9:13:27 AM

Item ID: D204-635-011

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Skidtube

Stop *NS2*

Start Date: 4/05/12 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 4/10/12 Req'd Qty: 1.00 *1*

Customer:

Reference: REWORK TO CHG 7

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

0.00

190

Packaging

Packaging

Memo

REMOVE:

D2707-041 B

D2736-1 X 1 B

D2736-3 X 1 B

REPLACE:

D3407-041 X 1 B

D3456-1 X 1 B

D3417-5 X 2 B

MS21043-4 X 1 B

D3405-041 X 1 B

D3405-043 X 1 B

AN4C46A X 4 B

MS21043-4 X 4 B

0.00

0.00

0.00

200

200

QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

Work Order ID 82759

82759

Page 5

April-09-12 9:13:27 AM

Item ID: D204-635-011

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube

Start Date: 4/05/12 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 4/10/12 Req'd Qty: 1.00 ***1***

Customer:

Reference: REWORK TO CHG 7

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

210

Identify as per dwg & Stock Location: _____

0.00

210

Packaging

Packaging

Memo

0.00

ID AND STOCK UNDER NEW BATCH NUMBER
NEW LABELS AND PAPERWORK REQ'D

CHG 007

SKIDTUBE IS AT CHANGE 7

12/4/11

220

QC4- 100% Inspect kits for completeness

0.00

220

QC

Quality Control

Memo

0.00

SKIDTUBE

@ CHG 007

230

QC21- Final Inspection - Work Order Release

0.00

230

QC

Quality Control

Memo

0.00

12/4/11

mf

12-04-11

Picklist Print

April-09-12 9:13:27 AM

Page 1

Work Order ID: 82759

Parent Item: D204-635-011

Parent Item Name: Skidtube

Start Date: 4/05/12

Required Date: 4/10/12

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:G02.08.28Removed QC5 KJ
IPP Rev:H 08-08-12 now @ chg 006 (DSI 9418) DD verf:EC
IPP Rev J 09.01.28 DSI 9418 rvB EC verifiedby:DD IPP REV:K 10.12.01 as per chg008
DD verf:EC IPP REV:L 12.01.23 AS PER ECN11-684 DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN3-4A Bolt		Purchased	No				Each	682.0000		121044			
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST350				682					
				104291				4					
				104625				300					
				117317				98					
				120308				80					
				120770				200					
AN3C4A BOLT		Purchased	No				Each	3,010.0000		44			
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST350				3010					
				120187				1972					
				120769				38					
				121205				1000					
AN4C46A BOLT		Purchased	No				Each	5.0000		4			
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST360				5					
				120334				5					
D2577-1 Wearplate 205		Manufactured	No				Each	56.0000		-1			
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				Mezz				56					
				22142				1					
				33055				14					
				33105				14					
				34275				30					

Picklist Print

April-09-12 9:13:27 AM

Work Order ID: 82759
Parent Item: D204-635-011
Parent Item Name: Skidtube

Start Date: 4/05/12
Start Qty: 1.00

Required Date: 4/10/12
Required Qty: 1.00

D2577-3 Manufactured No
Wearplate 205

Each 24.0000

-1 *ms at loc (cc)*

Location	Loc Qty	Loc Code
Mezz	24	
22170	1	
33056	15	
33106	8	

D2577-7 Manufactured No
Wearplate

Each 15.0000

-1 *all in loc 14*

Location	Loc Qty	Loc Code
Mezz	15	
21607	4	
37751	11	

D2707-041 Manufactured No
Tow Ring 205, Skidtube

Each 1.0000

-1

Location	Loc Qty	Loc Code
Mezz	1	
6923	1	

D2736-1 Manufactured No
Lug Assembly, 205 GHW

Each 10.0000

-1 *28889*

Location	Loc Qty	Loc Code
Mezz	10	
37766	3	
38421	3	
39064	4	

D2736-3 Manufactured No
Lug Assembly, 205 GHW

Each 10.0000

-1 *28015*

Location	Loc Qty	Loc Code
Mezz	10	
37154	2	
37928	3	
38661	3	
39842	2	

April-09-12 9:13:27 AM

Shop Packet Print

Picklist Print

April-09-12 9:13:27 AM

Page 3

Work Order ID: 82759

Parent Item: D204-635-011

Parent Item Name: Skidtube

Start Date: 4/05/12

Required Date: 4/10/12

Start Qty: 1.00

Required Qty: 1.00

D2876
Saddle Spacer

Manufactured No

Each 69.0000 2

D2877
Saddle Spacer

Manufactured No

Each 19.0000 2

D3405-041
Lug Assembly

Manufactured No

Each 4.0000 1

D3405-043
Lug Assembly

Manufactured No

Each 3.0000 1

D3407-041
Tow Ring

Manufactured No

Each 9.0000

Location

ST020

79693

Loc Qty

69

69

Loc Code

Location

ST020

78843

Loc Qty

19

19

Loc Code

Location

ST478

62227

77000

Loc Qty

4

2

2

Loc Code

Location

ST423

65703

ST478

78889

Loc Qty

2

2

1

1

Loc Code

Location

ST463

82067

Loc Qty

9

9

Loc Code

82031

82108 sl 12/4/11

April-09-12 9:13:27 AM

Shop Packet Print

Page 3

Picklist Print

April-09-12 9:13:27 AM

Page 4

Work Order ID: 82759

Parent Item: D204-635-011

Parent Item Name: Skidtube

Start Date: 4/05/12

Required Date: 4/10/12

Start Qty: 1.00

Required Qty: 1.00

D3417-5 Manufactured No Each 78.0000

2

D

Washer

Location	Loc Qty	Loc Code
ST042	78	
78842	41	
82024	37	

D3456-1 Manufactured No Each 122.0000

1

D

Washer

Location	Loc Qty	Loc Code
FG	7	
25701	7	
ST044	115	
80252	15	
81876	100	

D3533-1 Manufactured No Each 66.0000

2

?

Set Screw

Location	Loc Qty	Loc Code
ST053	66	
80326	66	

D3564-11 Manufactured No Each 20.0000

1

12/04/10

Wearshoe

Location	Loc Qty	Loc Code
FG	4	
77056	4	
FP001	16	
78871	4	
80341	12	

April-09-12 9:13:27 AM

Shop Packet Print

Page 4

Picklist Print

April-09-12 9:13:27 AM

Page 5

Work Order ID: 82759

Parent Item: D204-635-011

Parent Item Name: Skidtube

Start Date: 4/05/12

Required Date: 4/10/12

Start Qty: 1.00

Required Qty: 1.00

D3564-13 Manufactured No Each 36.0000 1
Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	2	
71594	1	
77610	1	
FP002	34	
80342	12	
82249	22	

D3564-7 Manufactured No Each 13.0000 1
Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	13	
33803	2	
43229	11	

D3564-9 Manufactured No Each 9.0000 1
Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FG	4	
76950	4	
FP001	5	
67590	4	
69943	1	

82255

D3566-1 Manufactured No Each 45.0000 1
Gasket

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP	-6	
81619	26	
FP002	51	
68924	2	
80919	17	

April-09-12 9:13:27 AM

Shop Packet Print

Page 5

Picklist Print

April-09-12 9:13:27 AM

Page 6

Work Order ID: 82759

Parent Item: D204-635-011

Parent Item Name: Skidtube

Start Date: 4/05/12

Required Date: 4/10/12

Start Qty: 1.00

Required Qty: 1.00

D3566-13 Manufactured No Each 18.0000
Gasket

1
u 12/6/14

Location	Loc Qty	Loc Code
FP002	18	
76947	18	

D3566-7 Manufactured No Each 20.0000
Gasket

1
u 12/6/14

Location	Loc Qty	Loc Code
FP002	20	
55490	20	

MS21043-4 Purchased No Each 1,709.0000
Nut

1
p

Location	Loc Qty	Loc Code
FG	40	
104603	40	
ST301	1669	
119546	304	
120308	365	
121162	1000	

MS21043-4 Purchased No Each 1,709.0000
Nut

4
12/6/14

Location	Loc Qty	Loc Code
FG	40	
104603	40	
ST301	1669	
119546	304	
120308	365	
121162	1000	

April-09-12 9:13:27 AM

Shop Packet Print

Page 6

Picklist Print

April-09-12 9:13:27 AM

Page 7

Work Order ID: 82759

Parent Item: D204-635-011

Parent Item Name: Skidtube

Start Date: 4/05/12

Required Date: 4/10/12

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

Each

3,399.0000

44

Washer

Handwritten: *44* *n/05/12*

Location

Loc Qty

Loc Code

ST297

513

119736

196

120648

317

ST298

2886

121255

2886

April-09-12 9:13:27 AM

Shop Packet Print

Page 7

Melanie Fauteux

From: David Shepherd <dshepherd@dartaero.com>
Sent: Thursday, April 05, 2012 1:40 PM
To: 'Chris Provencal'; mfauteux@dartaero.com
Cc: 'Mike Petsche'; 'L Lacelle'
Subject: RE: D204-635 CHG 004 skids from Hong Kong

All makes sense to me.

David

From: Chris Provencal [mailto:cprovencal@dartaero.com]
Sent: April-05-12 8:25 AM
To: mfauteux@dartaero.com
Cc: David Shepherd; Mike Petsche; 'L Lacelle'
Subject: D204-635 CHG 004 skids from Hong Kong

Mel,

Regarding the D204-635-011 skidtubes at CHG 004 that we received back from Hong Kong, my recommendations are as follows:

- Add (2) D3533-1 Set Screw, (2) D2876 Saddle Spacer, (2) D2877 Saddle Spacer to pick kit
- Update wearshoes: replace D2577-1/-3/-7 wearshoes, AN3-4A bolts, and AN960JD10L washers with D3566-9/-11/-7/-13 wearshoes & D3566-1/-7/-13 gaskets, AN3C4A bolts, and NAS1149C0332R washers
- Drill extra holes and install inserts for new wearshoes.
- Update tow ring: replace D2707-041 tow ring and associated hardware with D3407-041 tow ring, D3456-1 washer, MS21043-4 nut, and D3417-5 washer
- Update GHW lugs: replace D2736-1/-3 GHW lugs and associated hardware with D3405-041/-043 lugs, (4) AN4C46A bolt, (4) MS21043-4 nut
- Update stickers to say CHG 007

These changes would effectively make the tube a CHG 007, which would be functionally equivalent to the CHG 010 tubes we're making now. That way if the customer is installing one of these tubes along with a CHG 010, they're not going to have installation differences.

-Chris

#80754
#80754

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

LIST OF MATERIALS					PART NUMBER	DESCRIPTION
ITEM	QTY -041	QTY -045	QTY -047			
1	X				D2580-041	SKIDTUBE ASSEMBLY
2		X			D2580-045	SKIDTUBE ASSEMBLY
3			X		D2580-047	SKIDTUBE ASSEMBLY
4	1	1	1		D2500-1-190	EXTRUSION
5			16		D2570	BUSHING
6	1	1	1		D2576-3	STEP
7	20	24	25		D2579	SPACER
8	16	16	8		D2594-1	PLUG
9	16	16	8		D2594-3	O-RING
10	1	1	1		D2596	205 WEB
11	1	1	1		D2855	AFT CAP
12	1	1			D3564-5	WEARSHOE
13	1	1			D3564-9	WEARSHOE
14	1	1			D3564-11	WEARSHOE
15	1	1			D3564-13	WEARSHOE
16	2	2			D3566-1	GASKET
17	1	1			D3566-5	GASKET
18	1	1			D3566-13	GASKET
19			1		D4406-041	WEARPLATE ASSEMBLY
20			1		D4406-043	WEARPLATE ASSEMBLY
21	50	50			ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
22	50	50			AN3C4A	BOLT
23	2	2	2		AN3-5A	BOLT
24			8		AN4-45A	BOLT
25	50	50			NAS1149C0332R	WASHER (AN960C10L)
26	2	2	2		NAS1149D0332J	WASHER (AN960JD10L)
27			8		MS21042-4	NUT (OR MS21042L4)

GENERAL NOTES:

- MATERIAL: N/A
- FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: NONE
- WEIGHT: D2580-041 = 34.5 lbs
D2580-045 = 34.5 lbs
D2580-047 = 37.7 lbs
- WELDING PER DART QSI 004.
- INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/291.
- INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047)
- IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

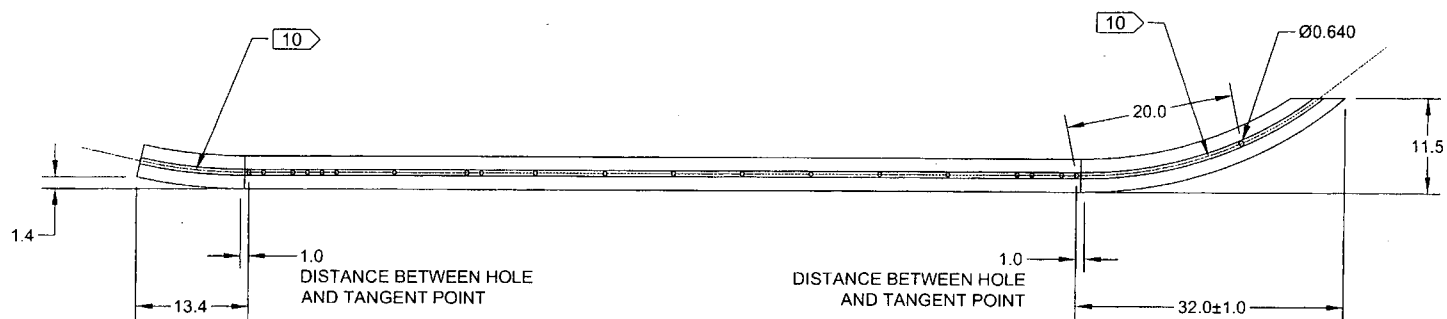
DEO ATTACHED

RELEASED

2011-08-29

82759

E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS DT2577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183	PH	07.04.05
C	REDRAWN, INCLUDED DEO 9094/9097	CP	98.08.26
B	AS MANUFACTURED	DS	96.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	#	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	14	DRAWING NO.	REV. E
MFG. APPR.	14	D2580	SHEET 1 OF 8
APPROVED	14	TITLE	SCALE
DE APPR.	14	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE LTD	



D2580-1 BENT TUBE
(MAKE FROM D2580-101 TUBE)

DEO ATTACHED

RELEASED
2011-08-28

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	140	DRAWING NO.	REV. E
MFG. APPR.	140	D2580	SHEET 3 OF 8
APPROVED	140	TITLE	SCALE
DE APPR.	140	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD	
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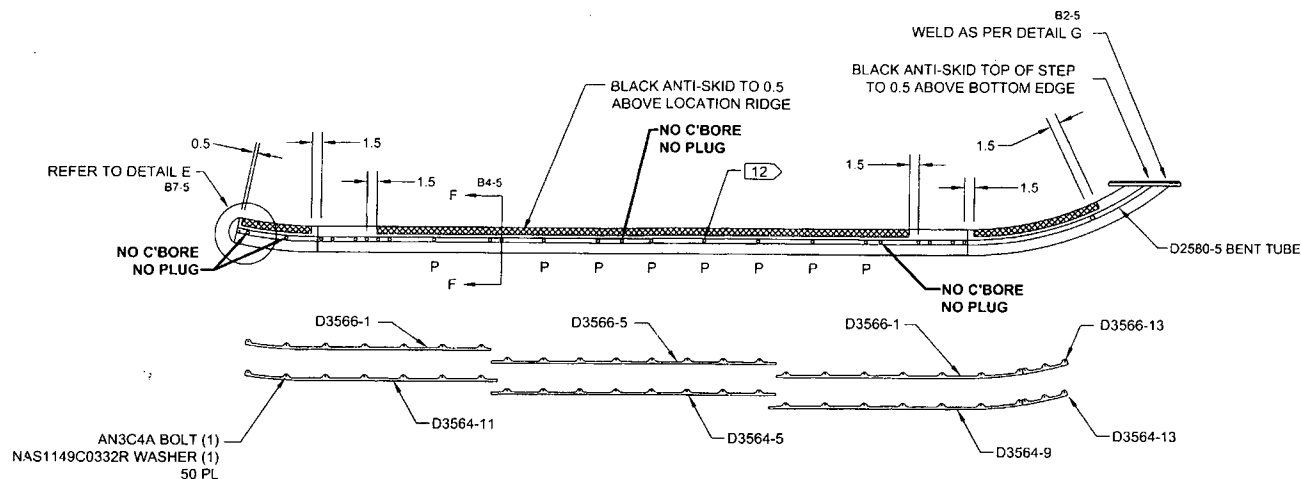
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D

C

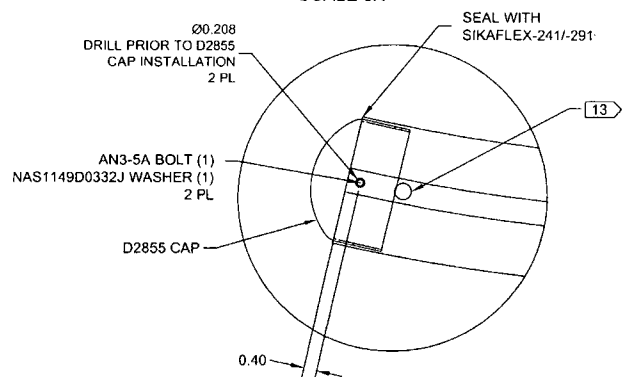
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A

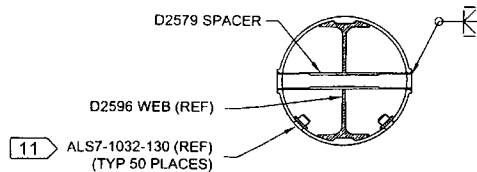


D2580-045 ASSEMBLY DETAIL

DETAIL E D7-5
SCALE 5X

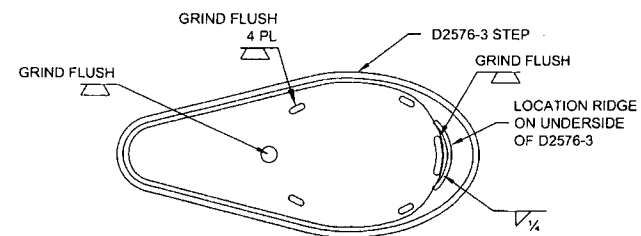


SECTION F-F D5-5
SCALE 5X



- AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
 2. INSERT D2579 SPACER (24 PLACES)
 3. WELD INTO PLACE AND GRIND FLUSH
 4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

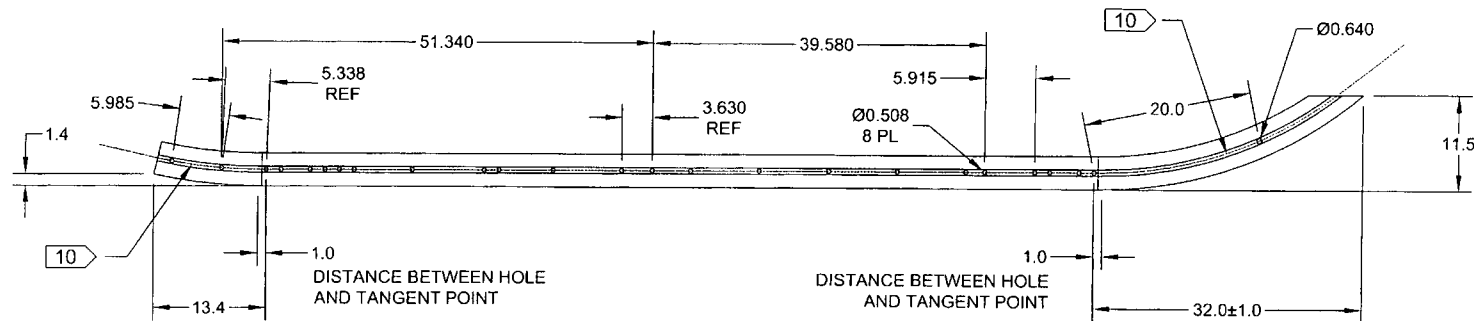
DETAIL G D3-5
SCALE 5X



DEO ATTACHED
RELEASED
2011-08-28
ANT

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	140	DRAWING NO.	REV. E
MFG. APPR.	140	D2580	SHEET 4 OF 8
APPROVED	140	TITLE	SCALE
DE APPR.	#	205 SKIDTUBE ASSEMBLY	NT
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD	
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8 7 6 5 4 3 2 1

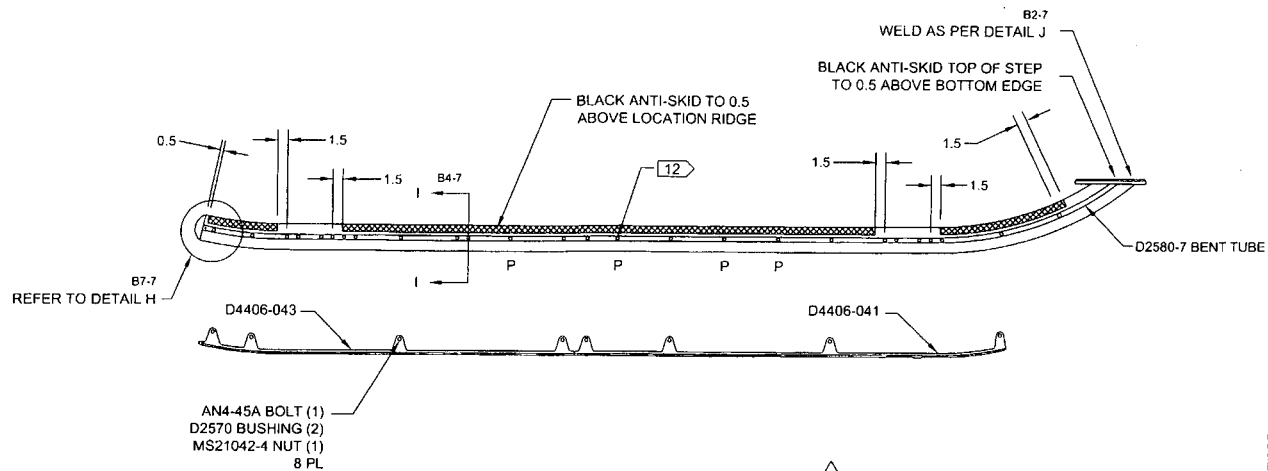


D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

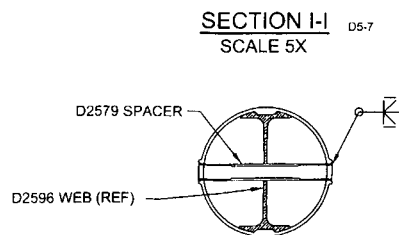
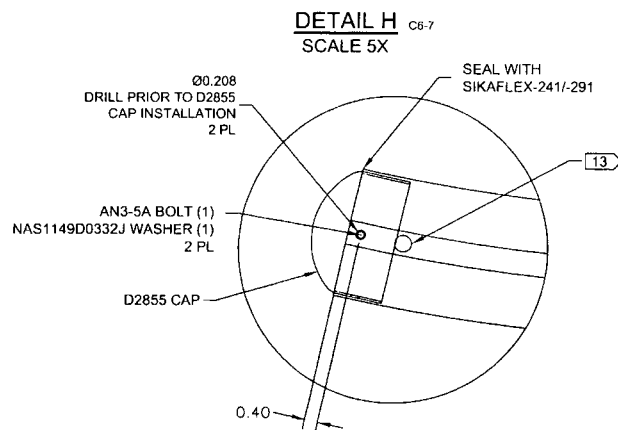
DEO ATTACHED

RELEASED
2011-08-29

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	SS	D2580	SHEET 5 OF 8
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1986 BY DART AEROSPACE LTD	
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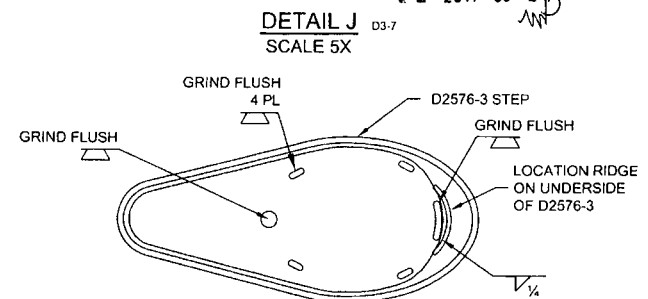


D2580-047 ASSEMBLY DETAIL E



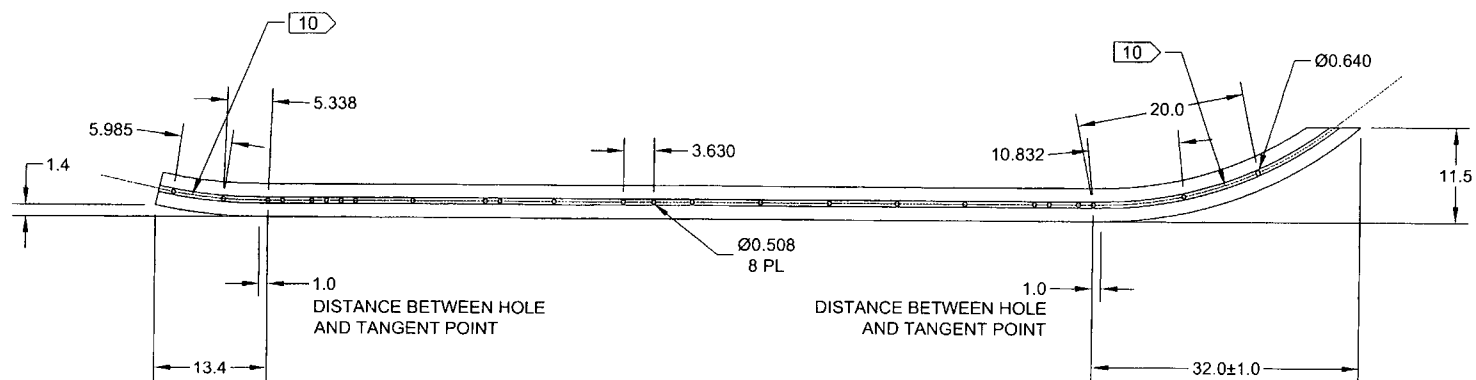
AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (25 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP



DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	14	DRAWING NO.	REV. E
MFG. APPR.	14	D2580	SHEET 6 OF 8
APPROVED	14	TITLE	SCALE
DE APPR.	14	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD	
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DEO ATTACHED
RELEASED
2011-08-28



D2580-7 BENT TUBE
(MAKE FROM D2580-101 TUBE)



DEO ATTACHED

RELEASED
2011-08-29
AW

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	RF	D2580	SHEET 7 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	<small>COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	

DRAWING NO. D2580	TITLE 205 SKIDTUBE ASSEMBLY	REV. E	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D2580-E-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>JP</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>EC</i>	APPROVED <i>[Signature]</i>		DE APPR. <i>[Signature]</i>		
DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13		DATE 11.12.13		

PURPOSE:

CHANGE ALL C'BORED WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

WAS

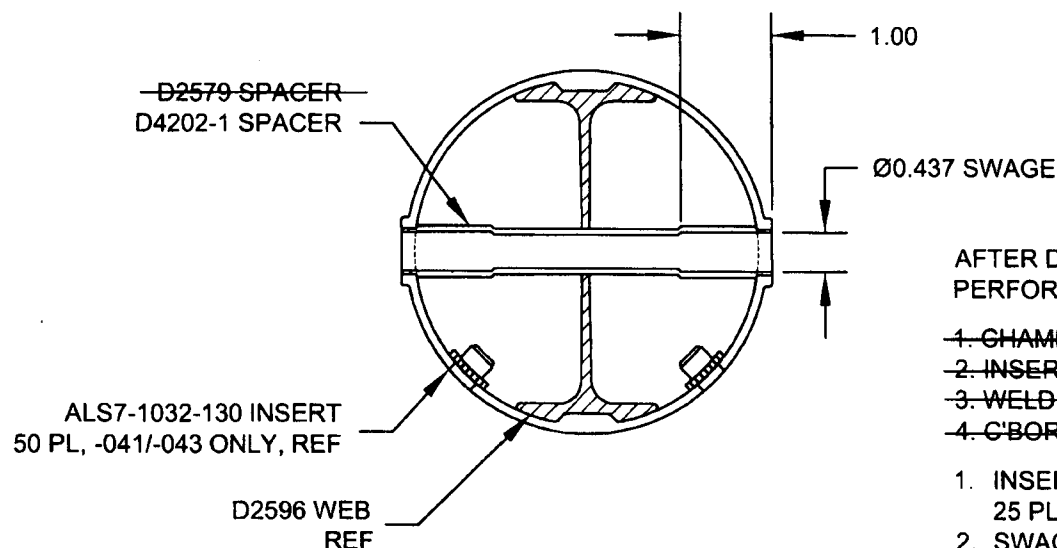
QTY	QTY	QTY	PART NUMBER	DESCRIPTION
-041	-045	-047		
20	24	25	D2579	CROSS BOLT SPACER

IS

	4		* D2579	CROSS BOLT SPACER
20	20	25	D4202-1	SPACER

*** FOR -045 SKIDTUBE ONLY:**
WELD 4X D2579 SPACERS PER DWG
IN LOCATIONS MARKED "NO C'BORE".
REF SHEET 4 OF DWG.

SECTION B-B, SECTION F-F, & SECTION I-I ARE AMENDED AS FOLLOWS
FOR ALL HOLES THAT WERE ORIGINALLY C'BORED:



SECTION B-B, F-F, I-I
NOT TO SCALE

RELEASED
2011-12-14 *[Signature]*

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

1. INSERT D4202-1 SPACER, 20 PL (-041) OR 20 PL (-045) OR 25 PL (-047)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

Date: Thursday, 12/14/2006 1:57:18 PM
User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: SKIDTUBE
Job Number	: 29959		
Estimate Number	: 11545		
P.O. Number	: <i>N/A</i>	Part Number	: D204635011
This Issue	: 12/14/2006 S.O. No. : <i>N/A</i>	Drawing Number	: N/A
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: <i>N/A</i> Type : LANDING GEAR	Drawing Revision	: N/A
Previous Run	: 29958	Material	: <i>N/A</i>
Written By	: <i>[Signature]</i>	Due Date	: 1/15/2007 Qty: 1 Um: Each
Checked & Approved By	: <i>[Signature]</i> 06 12 14		
Comment	: Est Rev: 02.08.28 Removed QC5 KJ		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	DC	DOCUMENT CONTROL
-----	----	------------------



Comment: DOCUMENT CONTROL

Photocopy bluefile and Type labels as per PPP D204-635-011 CHG004

07.01.12

2.0	29959A	SKIDTUBE
-----	--------	----------



Comment: Sub-Component Pick:

Qty	Part Number	Description	Batch
1	D204-635-041	Skidtube Assembly	11545 B29959A

3.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

4.0	K10003	D205-634-011 Saddle Kit
-----	--------	-------------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	K10003	Saddle Kit	B29615

EB 04/01/12

5.0	QC4	INSPECT 100% KITS FOR COMPLETENESS
-----	-----	------------------------------------



Comment: INSPECT 100% KITS FOR COMPLETENESS

1071.1/12

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: 28 Date: 07/01/15
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action		Section B		Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

Date: Thursday, 12/14/2006 1:57:19 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKIDTUBE

Job Number: 29959

Part Number: D204635011

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D204-635-011

Location: _____

PPP Rev: 5

EB 07/01/15 1627/01/15

7.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

07/01/15 (1)

Job Completion



u 07.01.15

Date: Thursday, 12/14/2006 1:57:42 PM
 User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: SKIDTUBE
Job Number	: 29959A		
Estimate Number	: 11546	Part Number	: D204635041
P.O. Number	: N/A	Drawing Number	: D2590 REV C
This Issue	: 12/14/2006 S.O. No. : N/A	Project Number	: N/A
Prsht Rev.	: NC	Drawing Revision	: C
First Issue	: N/A Type : LANDING GEAR	Material	: N/A
Previous Run	: 29958A	Due Date	: 1/15/2007 Qty: 1 Um: Each
Written By	: <u>JA 06-12-14</u>		
Checked & Approved By	: <u>JA 06-12-14</u>		
Comment	: Est Rev: 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
1.0	D25001190	Ext'n -1" Beam Tube 4"
Comment: Qty.: 1.0400 Each(s)/Unit Total: 1.0400 Each(s) Pick: Qty Part Number Description Batch 1 D2500-1-190 Skid Tube Extrusion <u>B24669</u> <u>Pm 06-12-14 (1)</u>		
2.0	D2597	204 Web
Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s) Pick: Qty Part Number Description Batch 1 D2597 204 Web <u>29961</u> <u>JD</u> <u>06-12-14 (1)</u>		
3.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
Comment: LANDING GEAR RESOURCE 1 1- Inspect mat'l. D2500-1-190 for damage <u>Pm 06-12-14 (1)</u> 2- Cut D2500-1-190 per Dwg D2590 .Debur ends <u>Pm 06-12-14 (1)</u> 3- Drill pilot holes using drill jig DT 8149 & DT8711-1&2 <u>Pm 06-12-14 (1)</u> 4- Acid etch and Alodine tube per QSI 005 4.1 <u>DP/JP 1 06-12-14 (1)</u> 5- Open holes to 0.500" as per Dwg D2590 without cutting fluid <u>Pm 06-12-15 (1)</u> 6- Countersink holes as per Dwg D2590 without cutting fluid <u>Pm 06-12-18 (1)</u> 7- Debur and blow out all chips from inside of tube <u>Pm 06-12-18 (1)</u>		

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: ED Date: 07/01/15
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
06-12-14	30	1KD2600-1-190 WAS cut short. cut to 128.4 → should be 169.5. Human error.	J	I.D. short tube use for a Tri-benon mid tube. Replace.	Pmc 06-12-14	06-12-14	J	06-12-14

NOTE: Date & initial all entries

Date: Thursday, 12/14/2006 1:57:42 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKIDTUBE

Job Number: 29959A

Part Number: D204635041

Job Number:



Seq. #:

Machine Or Operation:

Description :

8-Bond web in place per QSI 015. Allow 12 Hrs. cure time before cutting

Pick:

Qty Part Number Description Batch

A/R Sikaflex-291 *M 102107*

Sikaflex expire date: *07-02-01*

Start Time: *205*

Fin Time: *205 am 06-12-19*

RT/50 06-12-18 (1)

4.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend as per program D2590.C on CNC Bender

RT 06-12-21 (1)

5.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Cut tubes as per Dwg. D2590.

RT 06-12-21 (1)

2-Deburr ends after cutting. Remove alodine from around holes

Pr 06-12-21 (1)

6.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

BE 06-12-21

7.0

D25763

Step (Machining Detail)



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2576-3 Step *B 29486*

BE 06-12-21

8.0

D2579

Crossbolt Spacer



Comment: Qty.: 17.0000 Each(s)/Unit Total: 17.0000 Each(s)

Pick:

Qty Part Number Description Batch

17 D2579 Spacers *B 29603*

BE 06-12-21

Date: Thursday, 12/14/2006 1:57:42 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKIDTUBE

Job Number: 29959A

Part Number: D204635041

Job Number:



Seq. #:

Machine Or Operation:

Description:

9.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Prepare tube for welding D2576-3 Step Remove alodine as required.

BE 06-12-21

2-Weld step D2576 as per Dwg. D2590 and QSI 004.

A/R Aluminum Rod

M101446

BE 06-12-21

3-Weld crossbolt spacers D2579 as per Dwg. D2590 and QSI 004. For D2579

spacers, weld one

side, pass 3/8" drill, weld other side, pass 3/8" drill

A/R Aluminum Rod

M101446

BE 06-12-21

4-Grind welds as per Dwg D2590 Grind flush ridge made from bending

PM 06-12-22 ①

5-Drill holes for wearplates using DT 8218 Open holes to 19/64", adjust stopper not to hit cross tubes. Deburr

PM 06-12-22 ①

6-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2590. Deburr holes

PM 07-01-02 ①

7-Drill pilot holes for aft cap using DT 8215 Open holes to #6 Drill bit. Deburr

PM 07-01-02 ①

8-Drill pilot holes for Tow ring using DT8091, open to .640" and Deburr

PM 07-01-02 ①

10.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

AS 07/01/03 ①

11.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

AS 07/01/03 ①

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Powder Coat White (Ref: 4.3.5.2) as per QSI 005 4.3

M102391

M-R / YL

07/01/08

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

AM 07/01/09

①

Date: Thursday, 12/14/2006 1:57:42 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKIDTUBE

Job Number: 29959A

Part Number: D204635041

Job Number:



Seq. #:

Machine Or Operation:

Description :

14.0

D25771

Wearplate Fwd



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-1	Wearplate	29488

15.0

D25773

Wearplate Aft



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-3	Wearplate	29326

16.0

D25777

Wearplate



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-7	Wearplate	28639 21607

17.0

D25941

Plug



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
10	D2594-1	Plug	29621

18.0

D25943

O-Ring



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
10	D2594-1	Plug	27168

02594-3

O-ring

YL 07/10/09

Date: Thursday, 12/14/2006 1:57:42 PM
User: Kim Johnston

Process Sheet

Customer: 06-DAR001 Dart Helicopters Services

Drawing Name: SKIDTUBE

Job Number: 29959A

Part Number: D204635041

Job Number:



Seq. #:

Machine Or Operation:

Description:

19.0

D2855

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)
Cap 26351

20.0

ALS71032130

Insert



Comment: Qty.: 38.0000 Each(s)/Unit Total: 38.0000 Each(s)
Pick:
Qty Part Number Description Batch
38 ALS7-1032-130 Inserts 102475

21.0

AN960JD10L

Washer



Comment: Qty.: 40.0000 Each(s)/Unit Total: 40.0000 Each(s)
Pick:
Qty Part Number Description Batch
8 AN960JD10L Inserts 102477
Washer

22.0

AN34A

Bolt



Comment: Qty.: 38.0000 Each(s)/Unit Total: 38.0000 Each(s)
Pick:
Qty Part Number Description Batch
38 AN3-4A Bolt 102832

23.0

AN35A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)
Bolt 15205

24.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Install inserts & wearplates as per Dwg. D2590. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291 102672
Sikaflex expire date: 02/07

yl 07/01/09

Date: Thursday, 12/14/2006 1:57:43 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKIDTUBE

Job Number: 29959A

Part Number: D204635041

Job Number:



Seq. #:

Machine Or Operation:

Description :

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2590 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

A/R Sikaflex-291 102672

Sikaflex expire date: 02/07

5-Wing Walk as per Dwg D2590 and QSI 005 4.4

Batch:

1183004 93/ml 07 01 10

①

25.0

QC5

INSPECT WORK TO CURRENT STEP



ml 07 01 10



①

Comment: Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

26.0

QC21

FINAL INSPECTION/W/O RELEASE



①

Comment: FINAL INSPECTION/W/O RELEASE

07/01/15

Job Completion



W 07 01 15



DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2590	REV. C SHEET 1 OF 2
DATE 98.08.28		TITLE 204 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.28	REDRAWN, INCLUDED DEO 9094/9097	

RELEASED
98/09/11 BS

QTY	Part Number	Description
X	D2590-041	SKIDTUBE ASSEMBLY
*	D2500-1	EXTRUSION
1	D2597	204 WEB
1	D2575	AFT CAP
1	D2576-3	STEP
17	D2579	CROSS BOLT SPACER
10	D2594-1	PLUG
10	D2594-3	O-RING
1	D2577-1	WEARSHOE
1	D2577-3	WEARSHOE
1	D2577-7	WEARSHOE
38	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or ALS4-1032-130	INSERT
40	AN3-4A	BOLT
40	AN960JD10L	WASHER

00.08.28
LP 00.08.28

DEOS	
EFFECTIVE	9124 98/12/14

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RETURN TO
ENGINEERING

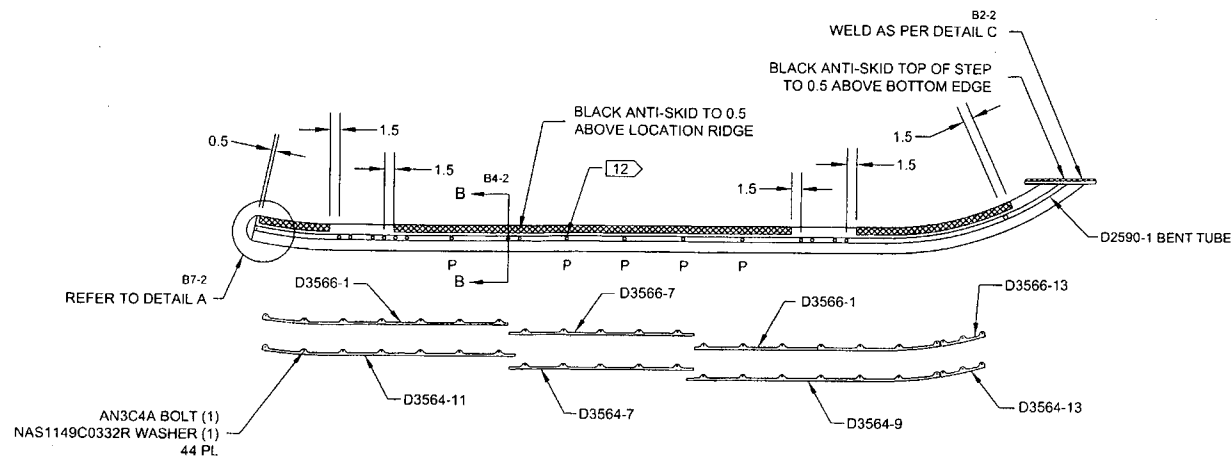
GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) LENGTH OF D2500-1 EXTRUSION BEFORE BENDING = 169.5 INCHES *
- 3) INSERT D2597 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-204 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (38 PLACES) AFTER FINISH. INSTALL AN3-4A BOLTS AND AN960JD10L WASHERS WITH SIKAFLEX-241.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:
ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2597 WEB
POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (10 PLACES).

UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

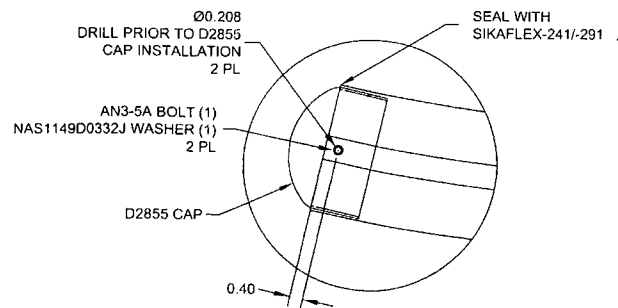
29959A

E	ADD D2590-043; DT8218 WAS TD2577-204 (ZN C4-1); REFORMATTED DRAWING TO CURRENT STANDARDS	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124	PH	07.04.05
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	98.08.28
B	AS MANUFACTURED	DS	96.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	4	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	10	DRAWING NO.	REV. E
MFG. APPR.	10	D2590	SHEET 1 OF 6
APPROVED	10	TITLE	SCALE
DE APPR.	10	204 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. ANY DISCLOSURE TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION OF DART AEROSPACE LTD IS PROHIBITED.</small>	

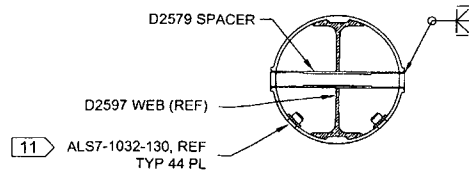


D2590-041 ASSEMBLY DETAIL

DETAIL A C6-2
SCALE 5X

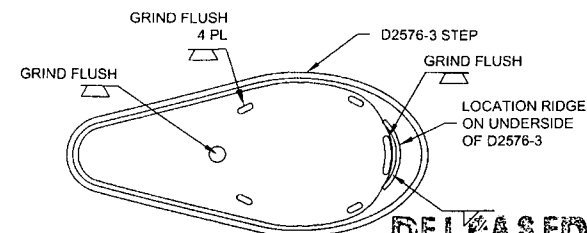


D5-2
SECTION B-B
SCALE 5X



- AFTER DRILLING AND BENDING ASSEMBLY PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
 2. INSERT D2579 SPACER (17 PLACES)
 3. WELD INTO PLACE AND GRIND FLUSH
 4. C-BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

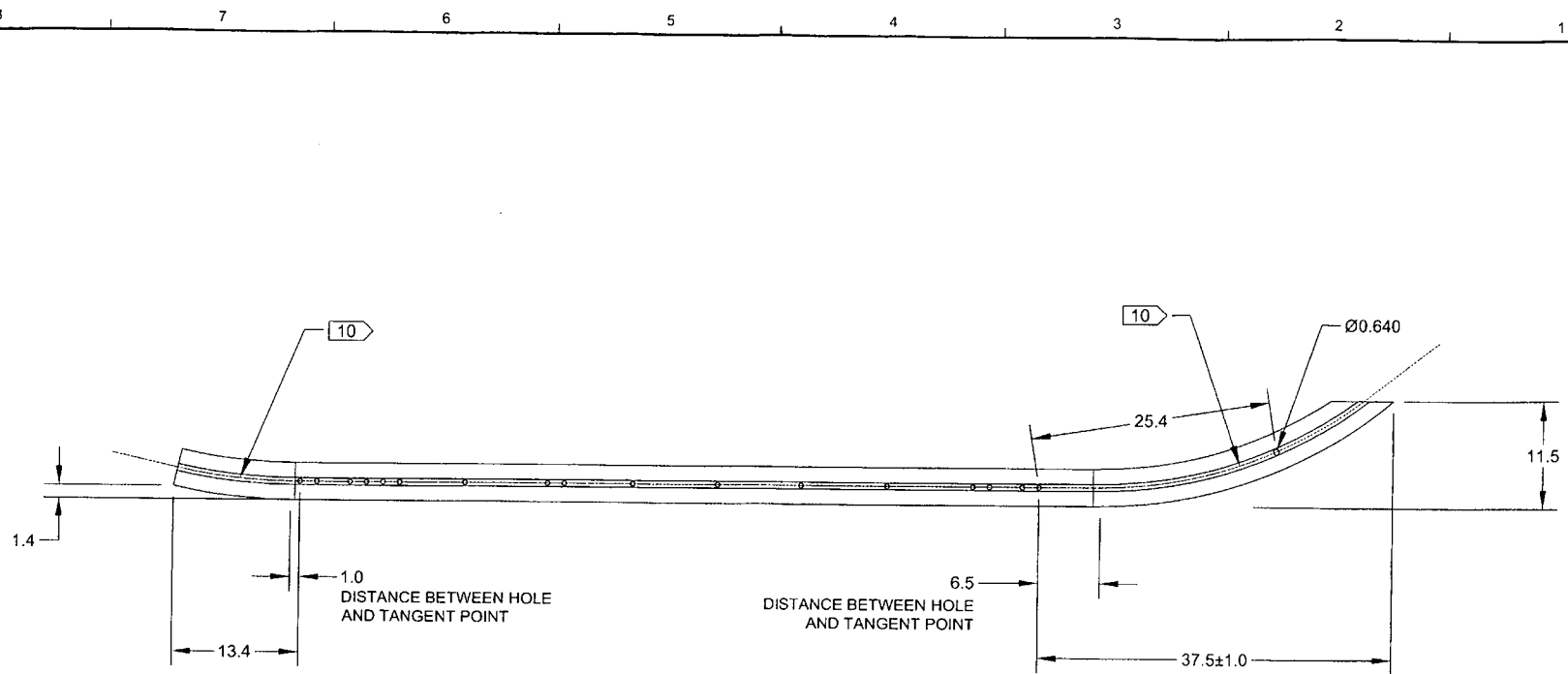
D3-2
DETAIL C
SCALE 5X



DEO ATTACHED

RELEASED
R 2011-08-29

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	140	DRAWING NO.	REV. E
MFG. APPR.	140	D2590	SHEET 2 OF 6
APPROVED	140	TITLE	SCALE
DE APPR.	140	204 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1986 BY DART AEROSPACE LTD	
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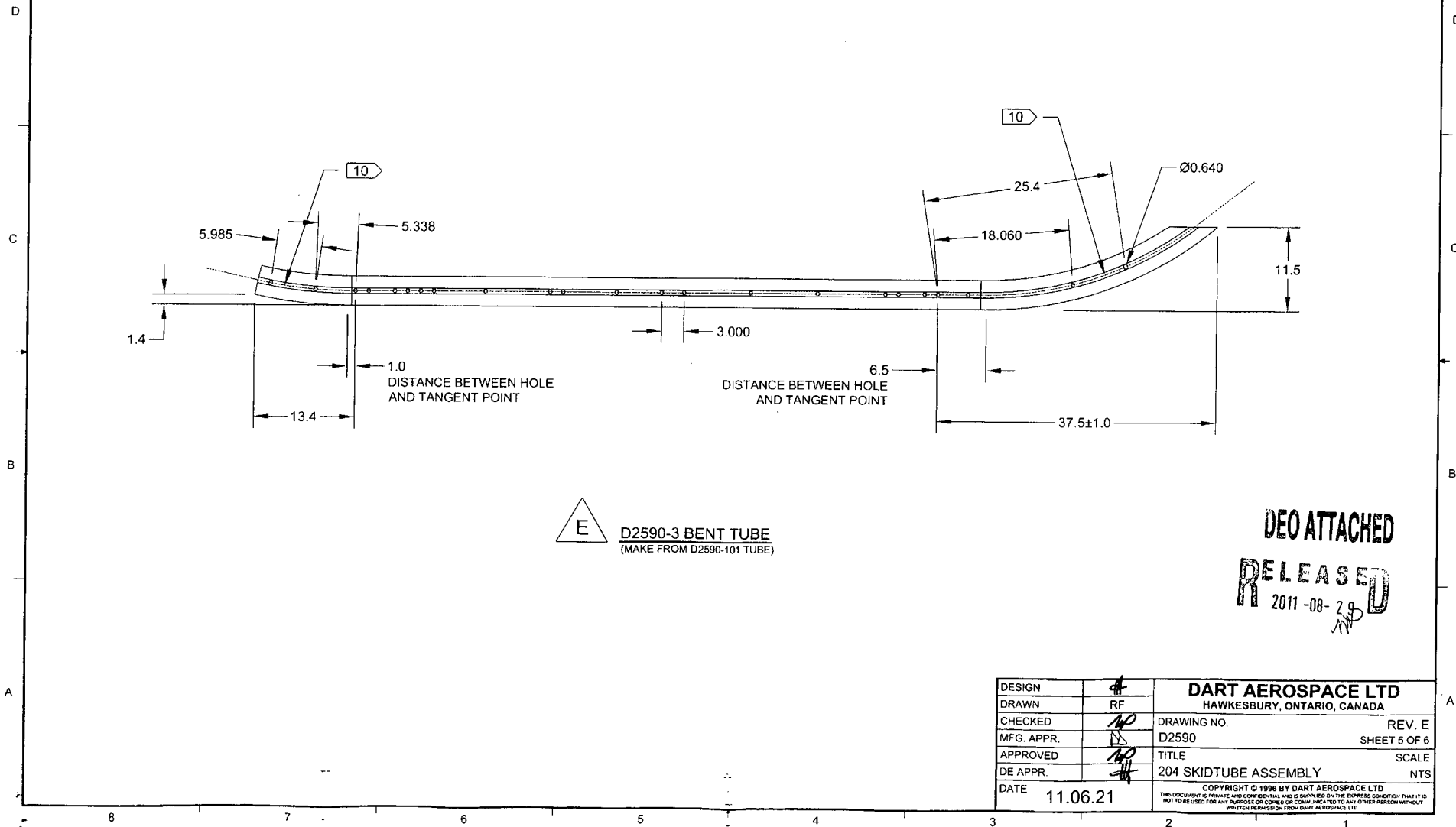


D2590-1 BENT TUBE
(MAKE FROM D2590-101 TUBE)

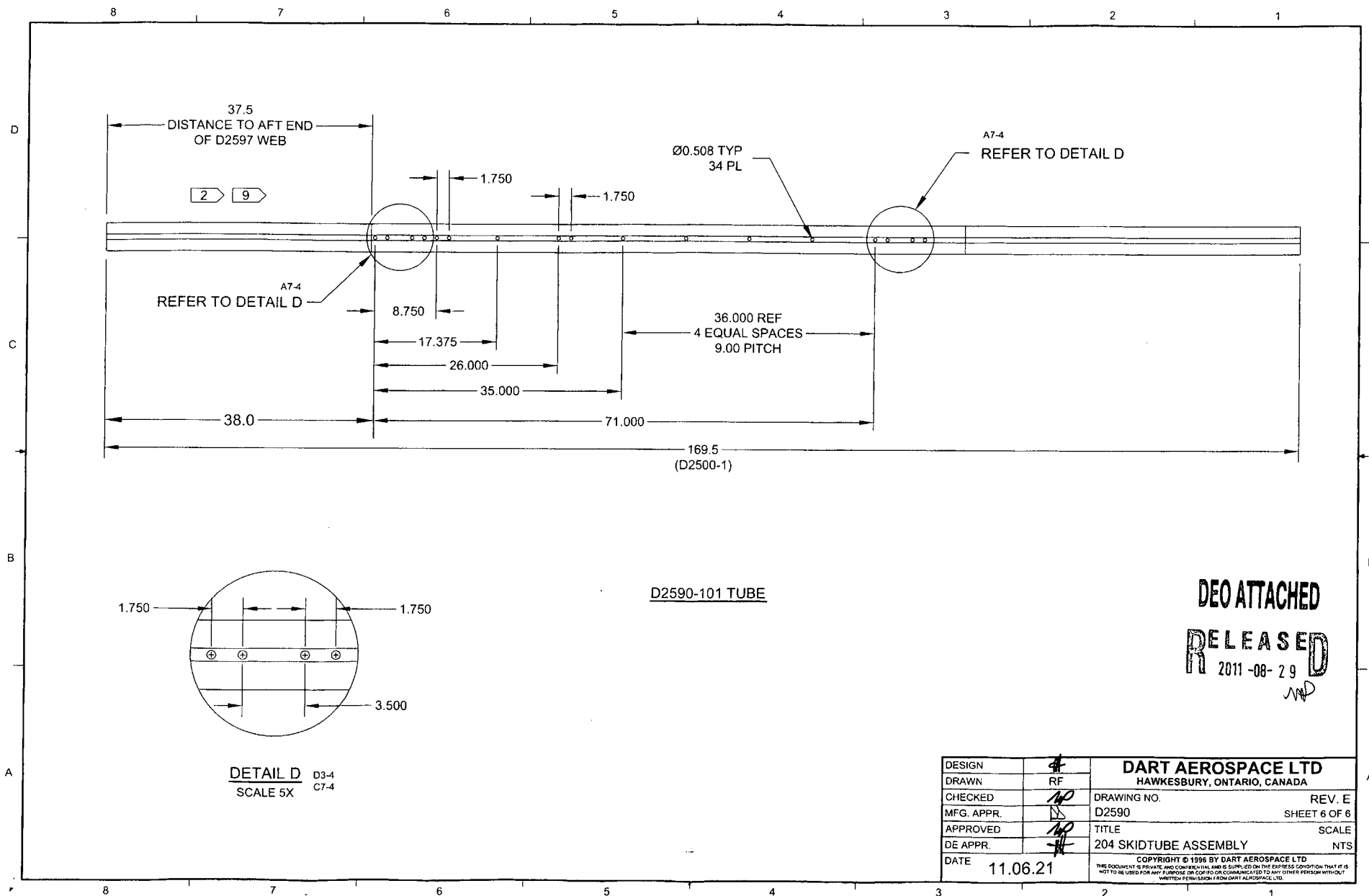
DEO ATTACHED
RELEASED
R 2011-08-29
JND

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	140	DRAWING NO.	REV. E
MFG. APPR.	140	D2590	SHEET 3 OF 6
APPROVED	140	TITLE	SCALE
DE APPR.	#	204 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD	
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8 7 6 5 4 3 2 1



8 7 6 5 4 3 2 1



DEO ATTACHED
RELEASED
2011-08-29
JND

DRAWING NO. D2590	TITLE 204 SKIDTUBE ASSEMBLY	REV. E	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D2590-E-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN 97	CHECKED ASS	MFG. APPR. [Signature]	APPROVED [Signature]		DE APPR. [Signature]		
DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11/12/13		DATE 11/12/13		

PURPOSE:

CHANGE ALL WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

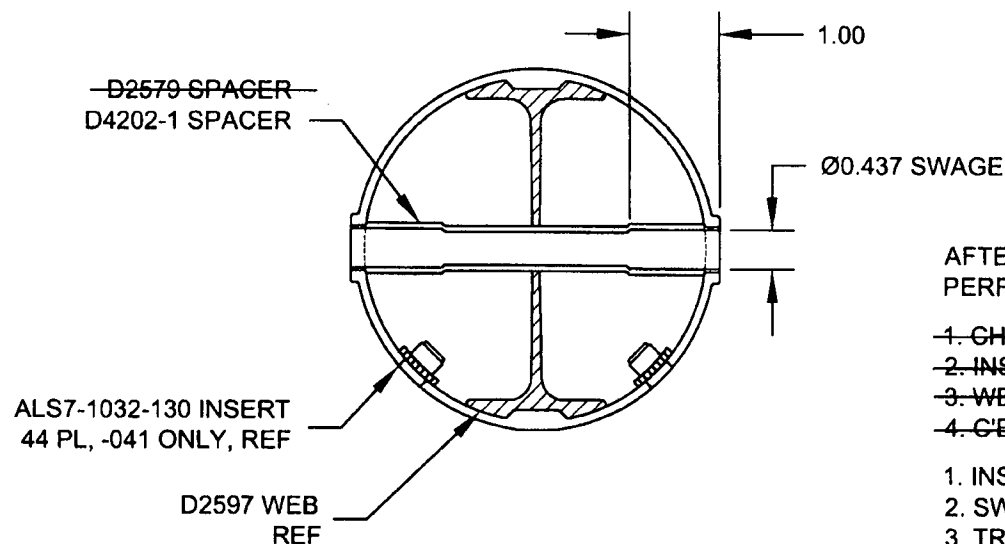
WAS

QTY	QTY	PART NUMBER	DESCRIPTION
-041	-043		
17	22	D2579	CROSS BOLT SPACER

IS

17	22	D4202-1	SPACER
----	----	---------	--------

SECTION B-B & F-F IS AMENDED AS FOLLOWS:



RELEASED
2011-12-15
[Signature]

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
 2. INSERT D2579 SPACER (17 PLACES)
 3. WELD INTO PLACE AND GRIND FLUSH
 4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP
1. INSERT D4202-1 SPACER, 17 PL
 2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
 3. TRIM / GRIND FLUSH PER QSI 002

SECTION B-B & F-F
NOT TO SCALE

Date: Tuesday, 11/21/2006 1:34:27 PM
 User: Kim Johnson

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : SADDLE KIT
 Job Number : 29615-1
 Estimate Number : 10532
 P.O. Number : N/A Part Number : K10003
 This Issue : 11/21/2006 S.O. No. : N/A Drawing Number : K10003
 Prsht Rev. : NC Project Number : N/A
 First Issue : N/A Type : SMALL/MED FAB Drawing Revision : C
 Previous Run : 29498 Material : N/A Due Date : 12/5/2006 Qty: 8 Um: Each
 Written By : JS 06 11 21
 Checked & Approved By : JS 06 11 21
 Comment : Est: I 03.01.16 Reformat: Incorporated D205-641-011
 KJ/RF
 Est: J 06-07-25 As per DSI 9344
 JLM
 Est: K 06.11.17 Per K10003 Rev C
 KJ

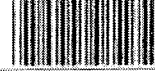
Additional Product

Job Number:



Seq. #: Machine Or Operation: Description:

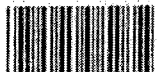
1.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy bluefile and type labels for D205-634-011 and D204-635-011 per PPP K10003
 CHG005

2.0 D2570 Bushing



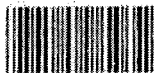
Comment: Qty.: 24.0000 Each(s)/Unit Total: 288.0000 Each(s)

Bushing

Pick:

Qty	Part Number	Description	Batch
24	D2570	Bushing	B29620

3.0 D2571 Saddle, Fwd, Out



Comment: Qty.: 1.0000 Each(s)/Unit Total: 12.0000 Each(s)

Saddle, Fwd, Out

Pick:

Qty	Part Number	Description	Batch
1	D2571	Saddle	B27992 5X B27887 6X

1X B26972

Date: Tuesday, 11/21/2006 1:34:27 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SADDLE KIT

Job Number: 29615

Part Number: K10003

Job Number:



Seq. #:

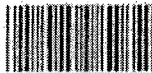
Machine Or Operation:

Description:

4.0

D2572

Saddle, Fwd, In



Comment: Qty.: 1.0000 Each(s)/Unit Total: 12.0000 Each(s)
Saddle, Fwd, In

Pick:

Qty

Part Number

Description

Batch

✓

D2572

Saddle

B27983

9X

B28779 3X

5.0

D2573

Saddle, Aft, Out



Comment: Qty.: 1.0000 Each(s)/Unit Total: 12.0000 Each(s)
Saddle, Aft, Out

Pick:

Qty

Part Number

Description

Batch

✱

D2573

Saddle

B27889

FX

B27994 XY

6.0

D2574

Saddle, Aft, In



Comment: Qty.: 1.0000 Each(s)/Unit Total: 12.0000 Each(s)
Saddle, Aft, In

Pick:

Qty

Part Number

Description

Batch

✓

D2574

Saddle

B27995

7X B28805

3X

7.0

D27361

Lug Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total: 12.0000 Each(s)
Lug Assembly

Pick:

Qty

Part Number

Description

Batch

✓

D2736-1

Bracket

B28889

8.0

D27363

Lug Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total: 12.0000 Each(s)
Lug Assembly

Pick:

Qty

Part Number

Description

Batch

✓

D2736-3

Bracket

B28015

Date: Tuesday, 11/21/2006 1:34:27 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SADDLE KIT

Job Number: 29615

Part Number: K10003

Job Number:



Seq. #:

Machine Or Operation:

Description:

9.0

D2747

Set Screw



Comment: Qty.: 4.0000 Each(s)/Unit Total: 48.0000 Each(s)

Set Screw

Pick:

Qty

Part Number

Description

Batch

✓ 4

D2747

Socket Head Set Screw

B25011 -

10.0

D2876

Saddle Spacer



Comment: Qty.: 2.0000 Each(s)/Unit Total: 24.0000 Each(s)

Saddle Spacer

Pick:

Qty

Part Number

Description

Batch

✓ 2

D2876

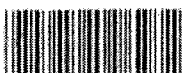
Spacer

B26387 -

11.0

D2877

Saddle Spacer



Comment: Qty.: 2.0000 Each(s)/Unit Total: 24.0000 Each(s)

Saddle Spacer

Pick:

Qty

Part Number

Description

Batch

✓ 2

D2877

Spacer

B26513 21X -

3X B24481 -

12.0

D2968041

Tow Ring



Comment: Qty.: 1.0000 Each(s)/Unit Total: 12.0000 Each(s)

Tow Ring

Pick:

Qty

Part Number

Description

Batch

✓ 1

D2968-041

Tow Ring

B28267 FX -

13.0

D35331

Set Screw



Comment: Qty.: 2.0000 Each(s)/Unit Total: 24.0000 Each(s)

Set Screw

Pick:

✓

Batch:

B28032 -

16

Date: Tuesday, 11/21/2006 1:34:28 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SADDLE KIT

Job Number: 29515

Part Number: K10003

Job Number:

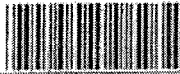


Seq. #: Machine Or Operation: Description:

14.0

AN46A

Bolt



Comment: Qty.: 16.0000 Each(s)/Unit Total: 192.0000 Each(s)

Bolt

Pick:

Qty

Part Number

Description

Batch

✓ 16

AN4-6A

Bolt

M162602 -

15.0

AN446A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total: 48.0000 Each(s)

Bolt

Pick:

Qty

Part Number

Description

Batch

✓ 4

AN4-46A

Bolt

M162114 -

16.0

AN451A

Bolt



Comment: Qty.: 8.0000 Each(s)/Unit Total: 96.0000 Each(s)

Bolt

Pick:

Qty

Part Number

Description

Batch

✓ 8

AN4-51A

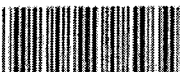
Bolt

M162536 -

17.0

AN612A

Bolt



Comment: Qty.: 8.0000 Each(s)/Unit Total: 96.0000 Each(s)

Bolt

Pick:

Qty

Part Number

Description

Batch

✓ 8

AN6-12A

Bolt

M160188 -

18.0

AN960JD416

Washer



Comment: Qty.: 32.0000 Each(s)/Unit Total: 384.0000 Each(s)

Washer

Pick:

Qty

Part Number

Description

Batch

✓ 32

AN960JD416

Washer

M162339 -

Date: Tuesday, 11/21/2006 1:34:28 PM
User: Kim Johnston

Process Sheet

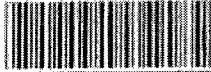
Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SADDLE KIT

Job Number: 29615

Part Number: K10003

Job Number:



Seq. #:

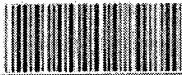
Machine Or Operation:

Description:

19.0

AN960JD616

Washer



Comment: Qty.: 8.0000 Each(s)/Unit Total: 96.0000 Each(s)

Washer

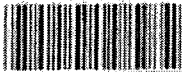
Pick:

Qty	Part Number	Description	Batch
8	AN960JD616	Washer	M101124-

20.0

AN9704

Washer



Comment: Qty.: 1.0000 Each(s)/Unit Total: 12.0000 Each(s)

Washer

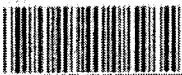
Pick:

Qty	Part Number	Description	Batch
1	AN970-4	Washer	M102380-

21.0

MS21042L4

Nut



Comment: Qty.: 29.0000 Each(s)/Unit Total: 348.0000 Each(s)

Nut

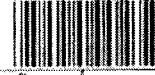
Pick:

Qty	Part Number	Description	Batch
29	MS21042L4	Nut (or MS21042-4)	M19185-

22.0

QC4

INSPECT 100% KITS FOR COMPLETENESS

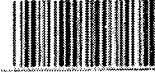
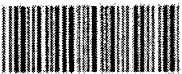


Comment: INSPECT KITS 100% FOR COMPLETENESS

23.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

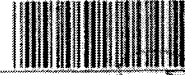
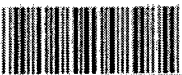
Identify and Stock

Location:

24.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



U 06.12.29



DESIGN #1	DRAWN BY CB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED PH	APPROVED #1	DRAWING NO. K10003	REV. C SHEET 1 OF 1
DATE 06.11.07		TITLE SADDLE KIT	SCALE NTS
A	00.06.01	NEW ISSUE	
B	00.11.22	ADD D2707-041 OPTION	
C	06.11.07	ADD D3533-1	

RELEASED

06.11.13

THIS KIT CONTAINS PARTS AND PAPERWORK APPLICABLE TO THE FOLLOWING SKIDTUBE AND SADDLE INSTALLATIONS:

AIRCRAFT	INSTALLATION
BELL 205/210/212/412	D205-634-011 D205-634-015
BELL 204	D204-635-011

THE FOLLOWING PARTS SHOULD BE USED PER THE RELEVANT DRAWINGS AND THE FOLLOWING TABLE (REF):

PART NUMBER	K10003	D205-634-011 D205-634-015	D204-635-011
D205-641-011	1	1	1
D2570	16	16	16
D2571	1	1	1
D2572	1	1	1
D2573	1	1	1
D2574	1	1	1
D2747	4	4	4
D2876	2	2	2
D2877	2	2	2
D2707-041 (or D2968-041)	1	1	1
D3533-1	2	2	2
AN4-51A	8	8	8
AN4-6A	16	16	16
AN6-12A	8	8	8
AN960JD416	32	32	32
AN960JD616	8	8	8
*AN960JD1016	1	1	1
AN970-4	1	1	1
MS21042-4 (OR L4)	25	25	25

* REQUIRED WITH D2707-041 ONLY

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